3 1761 09631478 6

PUBLISHERS OF LAW BOOKS
PRINTERS AND BOOKBINDERS
The Carswell Company
LIMITED
145-149 ADELAIDE STREET WEST
TORONTO CANADA

Digitized by the Internet Archive
in 2019 with funding from
University of Toronto

https://archive.org/details/annualexaminat1960dent

I

U N I V E R S I T Y

O F

T O R O N T O

Faculty of Dentistry

Examinations

6039

1960

HRA : 1641
22.9.61

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

PREPROFESSIONAL YEAR

ANTHROPOLOGY 1F

Answer all questions.

1. Discuss the most important ways in which Neolithic culture differs from that of preceding periods.

2. Some of the most important cultural developments during the Copper-Bronze Age are not reflected directly in the archaeological record. Discuss some of the sociological consequences of metallurgy that resulted in the tremendous expansion of metal age cultures.

3. Describe the social institutions and political organization of the African kingdom of Uganda.

4. Briefly define the following terms: nuclear family; neolocal residence; cross-cousin; ultimogeniture; classificatory kinship terminology.

5. Define the term enculturation and discuss the enculturational process in some detail.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Preprofessional Year

CHEMISTRY 108
General Chemistry

Examiner - J. A. PAGE

Logarithm cards to be supplied; slide rules permitted.
The examination is 150 minutes long, there are 150 marks.

Marks

15 1. (a) Indicate the energy levels occupied by the extranuclear electrons in the ground state of the atoms $_7N$, $_{11}Na$, $_{29}Cu$ and the ions Na^+ and Cu^{++}.

(b) Write out electron dot formulae to show the number and arrangement of the bonding electrons, in each of the following pure substances: NH_4Cl, HNO_3, NaH.

Clearly indicate the type of the bond(s) in each case, and give the resonance structures where applicable.

15 2. Draw diagrams to quantitatively illustrate each of the following. In each case carefully label the axes of the diagram as to units and clearly mark any significant numerical values.

(a) The vapour pressure of water as a function of temperature over the range from -10° to $+100^oC$. Label clearly the vapour pressure curve for ordinary water, undercooled water and solid ice.

(b) The time vs. temperature relationship when a dilute aqueous sucrose solution is partially frozen by slow uniform cooling from +10 to -10^oC.

15 3. (a) Complete and balance the following redox equations, giving in each case the half reactions corresponding to oxidation and reduction:

$$IO_3^- + I^- + H^+ \dashrightarrow I_2 + H_2O$$

$$Cu + NO_3^- + H^+ \dashrightarrow Cu^{++} + NO + H_2O$$

Marks

(b) Complete and balance the following equations for radioactive decay, giving in each case the atomic number and the mass number of the product (X):

$$^{232}_{90}Th \dashrightarrow X + \text{Beta particle}$$

$$^{239}_{93}Np \dashrightarrow X + \text{Alpha particle}$$

If 75% of a sample of $^{239}_{93}Np$ decays away in 4.6 days, what is the half-life of the isotope?

20 4. (a) Oxalic acid ($H_2C_2O_4$) is a weak diprotic acid with dissociation constants of 6.5×10^{-2} (K_a^1) and 6.1×10^{-5} (K_a^2) at 25°C. Predict whether a solution of sodium hydrogen oxalate ($NaHC_2O_4$) in water at 25°C will be acidic, neutral or basic. Justify your answer giving all relevant equations.

$K_W = 1.0 \times 10^{-14}$ at 25°C.

(b) The solubility of silver chloride (AgCl) in hydrochloric acid is a function of the acid concentration.

Describe and explain the effect of the acid concentration on the solubility, giving all relevant equations.

15 5. (a) $N_2 + 3\ H_2 \rightleftharpoons 2\ NH_3 + 22.1$ kilocalories (400°C)
What is the form of the equilibrium constant for the reaction? What would be the effect of (i) a change in pressure, (ii) a change in temperature, (iii) a catalyst, on the numerical value of the equilibrium constant for the reaction? Briefly justify your answer in each case.

(b) $H_2 + Br_2 \dashrightarrow 2\ HBr$ (300°C)
What would be the effect of (i) a change in temperature, (ii) a catalyst, (iii) an increase in pressure by the addition of the inert gas argon, and (iv) illumination, on the rate constant for the reaction? Briefly justify your answer in each case.

20 6. A solution, formed by dissolving 4.05 grams of pure sodium acetate ($NaOOCCH_3$) in enough water to give 500 ml. of solution, had a pH of 8.9 at 25°C.

(a) Calculate the concentration (in moles per litre) of each of the following solution constituents: hydronium ion, hydroxide ion, sodium ion, acetate ion, undissociated hydrogen acetate.

Marks

(b) Calculate a numerical value for the ionization constant of acetic acid (K_a) from the given data.

Atomic Weights: H 1.0; C 12.0; Na 23.0.

20 7. One liter of a 0.100 molar silver nitrate solution was electrolyzed for a period of time using platinum electrodes and a steady direct current of 0.100 ampere.

At the anode 56 ml. of oxygen gas, measured at 0°C and one atmosphere pressure, was evolved. At the cathode, 0.539 gram of silver metal was deposited and there was a simultaneous evolution of hydrogen gas.

(a) Calculate the volume of hydrogen gas (in ml.), measured at 0°C and one atmosphere pressure, evolved at the cathode.

(b) Calculate the time (in seconds) taken for the electrolysis.

(c) What is the composition of the solution after electrolysis? (State the major constituents and give their concentration in moles per liter of solution).

Atomic Weight: Ag 107.8. One Faraday 96,494 coulombs.

15 8. A solution formed by dissolving 2.50 grams of aluminium bromide in 1000 grams of benzene has an incipient freezing point 0.025°C below that of pure benzene. Calculate the molecular weight of aluminium bromide and deduce its molecular formula in benzene solution.

Atomic Weights: Al 27.0; Br 79.9

Molal Depression of Freezing Point in Benzene 5.1°C

15 9. A certain metal oxide, on heating to 250°C, breaks down, liberating oxygen gas and leaving a residue of pure metal. A 0.442 gram sample of the oxide produced 37.9 ml. of oxygen gas, measured at 27°C and a pressure of 740 mm. Hg.

Calculate the gram equivalent weight of the metal.

R 62.3 (liter)(mm. Hg) per mole per °A.

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1960

FIRST YEAR

ENGLISH COMPOSITION

Write an essay of approximately 1,000 words commenting on one of the following statements. You may support the statement, refute it, or modify it in any way you wish.

(1) "The purpose of a university is to unsettle the minds of the young"

(2) "Satire has naturally fluorished in the past, but today there is nothing left for a satirist to attack."

(3) "Canada is a geographical expression rather than a nation."

(4) "Only the old and forgetful regard youth as a time of untroubled happiness"

Your essay must take the form of a well-developed, coherent and convincing discussion. Give care to such matters as organization, paragraphing, sentence structure, spelling and punctuation. You are advised to use some of your time for planning and re-reading the essay.

English Literature

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1960

FIRST YEAR

ENGLISH LITERATURE

Examiners - The Staff in English

Answer FOUR questions in all: question 'A', and one from each of parts 'B', 'C', and 'D'. Students are advised to give 30 minutes to answering each question, and 30 minutes to planning and re-reading answers.

PART A

Identify the speaker and the situation, and comment in a sentence or two on the significance of five of the following quotations:

(a) I'm one of the undeserving poor: that's what I am.

(b) If she marries the man I would ha' her, she may love whom she pleases.

(c) Never fight fair with a stranger, boy. You'll never get out of the jungle that way.

(d) How vain are all these glories, all our pains,
Unless good Sense preserve what Beauty gains.

(e) I thought where all thy circling wiles would end,
In feigned religion, smooth hypocrisy!

(f) It is too late . . . . I waited and waited for you. But you did not come.

(g) It is a curious thing how your mind is supersaturated with the religion in which you say you disbelieve.

PART B

1. "The differences in inner character between Lear and Willy Loman are more significant than the differences in outward rank." Discuss.

2. "In the death of the tragic hero, defeat and triumph are mingled." Assess the truth of this statement with reference to two of the following: Lear, Samson, Willy Loman.

PART C

1. "Much of the comedy of character in Fielding springs from the contrast between intention and action or between appearance and reality." Discuss with reference to three or four characters in Tom Jones.

2. "If the satirist is a man who is indignant because of the contrast between his ideals for humanity and the actual state of human affairs, he needs to make clear to the reader what his ideals or standards are." What are Swift's positive ideals and how does he represent them in Gulliver's Travels?

3. "Stephen Dedalus in A Portrait of the Artist as a Young Man is in conflict not only with his environment but also with himself." Discuss.

PART D

1. Compare "The Bishop Orders his Tomb" OR "Andrea del Sarto" with Eliot's "The Love Song of J. Alfred Prufrock", considering form and technique as well as subject, theme and mood.

2. Defining the various attitudes expressed and techniques employed, discuss the treatment of death by three of the following poets: Donne, Browning, Housman, Eliot, Yeats.

3. Compare "Ode on a Grecian Urn" and "Ode to a Nightingale", pointing out any significant similarities or differences in theme, form and technique.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
PREPROFESSIONAL YEAR

FACULTY OF FORESTRY
FIRST YEAR

ANNUAL EXAMINATIONS, 1960

PHYSICS

Examiner - J. D. Prentice

Candidates may use slide rules; log tables will be supplied. Answer any FOUR questions. Use diagrams and formulae whenever possible to enhance clarity and conciseness.

1. The equilibrium distance between the atoms of an oxygen molecule is 1.21×10^{-10} m. When it is not rotating it can vibrate (simple linear periodic motion of each atom) at a frequency of 4.74×10^{13} vibrations/sec.

(a) What is the force constant for the vibration?

(b) What is the moment of inertia of the molecule?

(c) If the molecule rotates, without vibrating, fast enough to have 3.42×10^{-22} joules of kinetic energy, how much will the molecule be stretched by its rotation?

2. In an X-ray tube in which the electrons are accelerated through a potential difference of 20,000 volts, the target is a cylindrical copper rod 10 cm long and 0.3 cm in diameter, at room temperature (20°C). The electrons strike one end and the other end is maintained at 15°C by a stream of running water. The current through the tube is 1.0 milliampere.

(a) How many electrons strike the target per second?

(b) Neglecting the energy carried away by the X-rays, calculate the temperature of the target face assuming all the heat produced by the electrons is conducted along the rod to the cooling water.

(c) What is the area of the circular end of the rod, which the electrons strike, when the tube is running continuously?

(d) If the cooling water enters at 10°C and leaves at 15°C, what rate of flow must be maintained to keep the cool end of the rod at 15°C?

3. A certain car battery has an e.m.f. of 6.0 volts and an internal resistance of 0.05 ohms. In normal operation each headlight uses 50 watts of power.

(a) What is the current in each headlight in normal operation with no other load on the battery (the headlights are connected in parallel)?

(b) What is the current in each headlight when the engine is being started if the starting motor uses 70 amperes? (Assume resistance of headlights to be constant.)

(c) What 60 cycle A.C. voltage would be necessary to light the headlight to its normal brightness when connected in series with a 0.001 henry self inductance?

4. Po^{210} (mass 210.0490 a.m.u. and half life 138 days) is one of the radioactive products of the decay of Ra. It decays to Pb^{206} by emitting an α-particle of mass 4.00387 a.m.u. with an energy of 5.3 MeV.

(a) Calculate the mass of Pb^{206} in a.m.u.

(b) At what velocity does the Pb^{206} nucleus recoil if the Po^{210} nucleus is at rest just before the decay?

(c) If a Po^{210} source initially gives 10^7 α-particles sec^{-1} how many will it emit per second one year and 79 days later?

5. A new type of electric generator which does not contain any solid moving parts has recently been described in "Time" magazine.

Gas heated to sufficiently high temperatures to cause some ionization is streamed through a horizontal tube across which is applied a horizontal magnetic field. Two horizontal plates, one above and one below the stream of gas are connected to the terminals of the generator.

(a) Explain why a voltage develops between the plates when the gas, containing positively and negatively charged particles, passes along the tube and draw a diagram to show the polarity of the plates and the direction of the magnetic field.

(b) (i) Helium heated to $2500^{o}C$ in a nuclear reactor might be used as the gas. What is the average random velocity of Helium atoms at this temperature? (ii) What would be the final pressure of the gas if it were heated in a closed container from $20^{o}C$ and atmospheric pressure to $2500^{o}C$?

(c) With no external load connected to the plates the voltage will build up to some maximum value and then remain constant. Assuming the plates to be very long and 0.25 meters apart and with a magnetic induction of 0.5 webers/m^2, what is this maximum voltage using singly charged He ions travelling at the velocity found in (b)?

6. (a) NOTE: DO EITHER (i) OR (ii).

Discuss briefly the connection between the principles involved in (i) Compton scattering of X-rays and the electron diffraction experiment of Davisson and Germer

OR

(ii) Planck's theory of black body radiation and Einstein's explanation of the photo-electric effect.

(b) Describe briefly an important contribution to physics by one of the following: Rutherford or Bohr or Moseley.

(c) In electron microscopes used for examining individual cells high resolution is obtained by the use of short wave length electron beams. Through what potential difference should electrons be accelerated in order to have a wave length of 1.0 A.U.?

7. (a) The speed of a satellite in orbit could be increased by spreading "solar sails" normal to the sun's rays while receding from the sun and folding them parallel to the rays while approaching it, thus making use of the pressure due to the sun's radiation. When the sun is directly overhead the energy received at the earth's surface is about 2.0 cal min^{-1} cm^{-2}. Assuming this intensity to be the same for a satellite in orbit calculate the force on a black "sail" of 25 m^2 area when normal to the sun's rays.

Why would a reflecting "sail" be better?

(b) Explain briefly what happens when light is emitted by a luminous watch dial.

(c) Why is a radioactive isotope which only emits α-particles more suitable for use in the fluorescent paint for such a dial, than an isotope which emits β-particles and γ-rays?

TABLE OF CONSTANTS

$k = 1/4\,\pi\varepsilon_o$	9×10^{9} nt m^2 $coul^{-2}$
Electron mass.	9×10^{-31} kgm
Electron charge	1.6×10^{-19} coulombs
Planck's constant, h.	6.62×10^{-34} joule sec
Speed of light in vacuum, c . . .	3.00×10^{8} m sec^{-1}
Proton mass	1.6723×10^{-27} kgm
Atomic mass unit a.m.u.	1.6599×10^{-27} kgm
Angstrom Unit, A.U.	10^{-10} m
Thermal coefficient of linear expansion of copper	1.67×10^{-5} $(^{o}C)^{-1}$
Thermal conductivity of copper . .	0.918 cal cm^{-1} sec^{-1} $(^{o}C)^{-1}$
π	3.1416
Boltzmann's Constant, k	1.38×10^{-23} joules $(^{o}K)^{-1}$
Mass of He atom	4.00 a.m.u.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

PREDENTAL ZOOLOGY

(A and B parts to be written in separate books)

PART A

1. Compare in tabular form respiration, food prehension, digestion and excretion in Hydra and Nereis.

2. (a) List five essential features of organs of external respiration in Vertebrates.

(b) Show by means of diagrams how these essentials are met in the respiratory organs of fish and mammals.

3. List ten definite functions of each of the two divisions of the autonomic nervous system of a mammal.

or

Explain the interrelations of the hormone control of egg production of mammals. Use a diagram to elucidate your answer.

PART B

4. Construct a drawing of a sagittal section through an amphibian to show the main morphological features of the animal.

5. Write explanatory notes on two of the following:

(a) In the process of alternation of generation, each individual resembles its grandparents, never its parents.

(b) Platyhelminthes show marked complexity in organs of reproduction.

(c) The lobster clearly reveals the four most important features of the phylum Arthropoda.

(d) The Polychaeta show more specialization than the Oligochaeta: use Nereis and Lumbricus, respectively, as examples.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

First and Second Dental Years

BIOCHEMISTRY

Examiner - G. E. CONNELL

Answer EIGHT questions

1. Describe two lines of evidence which show that "genes" are composed of deoxyribonucleic acid.

2. Describe the chemical structure of glycogen. Describe the action of salivary amylase on glycogen.

3. Name three proteolytic enzymes which are present in pancreatic juice. Show how these enzymes act on proteins.

4. Sketch a titration curve for a weak acid and label the significant features. Prove that the pK for a weak acid is equal to the pH at half neutralization.

5. Compare enamel, dentin, and bone with respect to their chemical composition.

6. Give a concise summary of the contributions of Warburg and Keilin to our knowledge of respiratory mechanisms.

7. Discuss the meaning of the term "high energy bond". Describe one biochemical reaction in which a high energy bond is formed.

8. Name two plasma proteins and state their physiological importance.

9. Discuss the role of creatine phosphate in muscle contraction.

10. Discuss the role of hemoglobin in the "isohydric transport" of CO_2 in the blood.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

FIRST DENTAL YEAR

COMPARATIVE DENTAL ANATOMY (Zoology 38)

Answer FIVE questions only

Whenever applicable, diagrams may be used to illustrate your answers. Laboratory Books to be left in Zoology Library not later than 5:00 p.m. February 3, 1960.

1. Give a functional and anatomical account of the development of the jaw mechanism from the earliest agnath Chordata to Mammalia.

2. Two opposing tendencies operating in the evolution of the dentition of Vertebrata are reduction in numbers and specialization of the units. Discuss this including exceptions with reference to the Pisces, Amphibia, Reptilia, and Mammalia.

3. Discuss EITHER the dental adaptations of the terrestrial and aquatic Carnivora

OR

the perissodactyl and artiodactyl ungulates.

4. Give EITHER a comparative account of the development of vertebrate scales

OR

relate the development of the placoid scale to that of the higher vertebrate tooth.

5. The vertebrate skull shows many varying proportions and specializations of the cranial region. Relate these to the food prehensive and grinding habits of the animals. Give examples from Primates, Perissodactyla, Artiodactyla, Rodentia, Proboscidea, Insectivora, and Marsupialia.

6. Show that you know what is meant by ten of the following terms:-

(a)	tritubercular	(g)	ameloblast
(b)	zahnreihen	(h)	isopedin
(c)	septomaxilla	(i)	anchylosis
(d)	carnassial	(j)	pleurodont
(e)	selenodonty	(k)	diapsid
(f)	heterodonty	(l)	stratum malpighii.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

First Dental Year

GROSS AND DENTAL ANATOMY

All questions are of equal value. Time: 2 1/2 hours.

Parts A and B to be written in separate Examination Books.

PART A

1. Describe the application of anatomical principles to:
   (a) Tracheotomy.
   (b) Anesthesia of the palate.
   (c) The spread of infection from an ulcer on the tongue.

2. By means of diagrams, show the immediate relationships of:
   (a) The pituitary gland.
   (b) Hyoglossus muscle.
   (c) The uterus.

3. Write concise notes on:
   (a) The meniscus of the temporo-mandibular joint.
   (b) The valves of the heart.
   (c) The styloid process.

4. (a) Give the distribution of the middle cerebral artery and interpret the loss of sensory and motor function resulting from its occlusion.
   (b) Describe briefly the course and distribution of the vagus nerve.

PART B

5. Discuss the replacement of the primary teeth in the human arch by their permanent successors under each of the following headings:

(a) The time and the sequence of replacement for each tooth.

(b) How the larger permanent anterior teeth are accommodated in the arch.

(c) The mechanism whereby the upper and lower first permanent molars come into normal centric contact relation.

(d) The contact relation of the lingual surface of each anterior tooth, and the lingual cusps of each posterior tooth in the upper arch, when the teeth are in normal centric contact.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

First Dental Year

MICROSCOPIC ANATOMY

NOTE: 1. Answer Parts A and B in separate examination books.

2. Use drawings to illustrate your answers wherever possible.

3. All questions of equal value.

PART A - GENERAL

1. (a) What is a Basement Membrane?
(b) Describe its microscopic structure and give its origin.
(c) Give three specific examples of where a basement membrane may be found, and discuss its function in each case.

2. (a) Describe the microscopic structure of the trachea.
(b) What modifications of this structure occur in the walls of the other parts of the conducting portion of the respiratory system as one proceeds toward the lung alveoli?

3. (a) Describe the microscopic structure of the pituitary gland.
(b) What is the Hypophyseo-portal Circulation and what is its significance?

PART B - ORAL

1. Compare and contrast enamel and dentin under each of the following headings:
(a) Origin
(b) Mineralization
(c) Structure.

2. Describe in detail the microscopic appearance of a developing tooth through its various formative stages from initiation until the shape and size of the crown is determined.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

FIRST DENTAL YEAR

CHEMISTRY 216
ORGANIC CHEMISTRY

Examiner - R. R. Hiatt

NO AIDS PERMITTED

I (80 points)

A certain compound (A) has the formula $C_2H_2O_2$. It reacts with 2 molecules of NH_2OH to give (B), $C_2H_4N_2O_2$. (A) reacts with ammoniacal Ag_2O giving a silver mirror and (C) $C_2H_2O_4$. (A) on treatment with HCN gives (D), $C_4H_4N_2O_2$, which when boiled with dilute HCl gives tartaric acid, (HO_2C-CHOH-CHOH-CO_2H), (E) Tartaric acid can also be made by reaction of dilute $KMnO_4$ with compound (F), $C_4H_4O_4$. (F) is also a dicarboxylic acid; it reacts with H_2 and Pt to give another dicarboxylic acid (G), $C_4H_6O_2$ or with bromine water to give (H), $C_4H_4Br_2O_4$.

1. Draw structures for compounds A to D, F to H, and name each. Recollect that (F) has two possible sterioisomers (F_1 and F_2). Draw and name both. (F_1) may lose H_2O to form an intramolecular anhydride. (F_2) does not. Write the equation for F_1 losing H_2O.

2. (E) Tartaric acid displays a different kind of sterioisomerism. Draw the possible isomers. Suppose you have a mixture of all of them. Outline a method of separating and distinguishing which is which. Discuss other possible methods of separating these isomers. Define diasteriomer.

3. The compound (F_2) does not absorb light in the visible region of the spectrum but does absorb ultraviolet light. What colour is (F_2)? Describe (F_2) in terms of its chromophoric groups.

II (20 points)

Draw structures for:

1. a typical soap,
2. an aldopentose,
3. a dye,
4. a bakelite fragment,
5. a globulin fragment.

III (60 points)

1. Write reactions for the action on acetone of each of the following reagents:

   (a) hydroxylamine,
   (b) I_2 + NaOH,
   (c) $K_2Cr_2O_7 + H_2SO_4$,
   (d) $Ba(OH)_2$,
   (e) Pt + H_2

2. Write reactions for the action on 3-methyl butyne of each of the following reagents:

   (a) $Ag(NH_3)_2^+$
   (b) HCl
   (c) H_2 + Pt
   (d) H_2O + $HgSO_4$
   (e) $KMnO_4$

3. Write reactions for the action on 2-chloromethyl-cyclopentanol of each of the following reagents:

   (a) hot Al_2O_3,
   (b) NaOH (aqueous),
   (c) HBr,
   (d) H_2CrO_4,
   (e) acetaldehyde + H^+

4. Write reactions for the action on glucose of each of the following reagents:

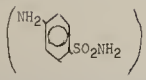
   (a) phenylhydrazine,
   (b) acetyl chloride (excess),
   (c) HNO_3,
   (d) Br_2 in H_2O,
   (e) $CH_3OH + H^+$

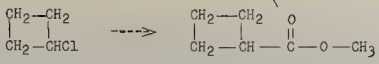
IV (80 points)

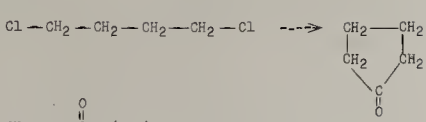
Each of the following transformations may be effected by a short series of reactions. Supply equations showing how they might be carried out. (Neither the Wurtz reaction, nor light catalized chlorination is necessary in any case)

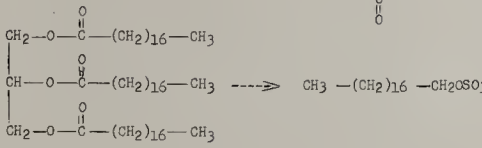
1. benzene ----> m-bromonitrobenzene

2. benzene ----> sulfanilamide

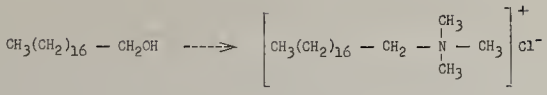


3. 

4. 

5. 

6.

7. 

8. Glycylglycine -----> hydroxyacetic acid

V (10points)

A certain compound contains only carbon, hydrogen and oxygen. Its molecular weight is 46.07. Its boiling point is - 2°° C. What is its structure?

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Second Dental Year

BACTERIOLOGY

1. (a) Name a disease for which active immunity is used therapeutically and what is the mechanism involved.
(b) Name a disease for which passive immunity is used therapeutically and what is the mechanism involved.

2. What are the mechanisms and substances involved in three types of chronic hypersensitivity diseases?

3. What is the pathogenesis of meningococcal infections?

4. Give a classification of streptococci based on nutritive requirements, biochemical properties, habitat, action on blood cells and antigenic properties.

5. A vesicular eruption is seen on the lips and adjacent skin; by what methods could the causative agents be identified?

6. In what incidence would it be advisable to perform antibiotic sensitivity tests?

7. Give in a list form the laboratory procedure to identify the causative organism of gastro-enteritis.

8. Describe the methods to isolate three gram positive and two gram negative organisms from a sample of the bacterial flora of man.

9. (a) What is the meaning of a positive Schick test?
(b) What is the meaning of a positive Dick test?
(c) What is the TPI test?
(d) What is the role of Clostridium sporogenes in gas gangrene?
(e) What is the laboratory diagnosis of actinomyces infections?

10. Write a short note on any three of the following:
    (a) BCG
    (b) Recurrent fever
    (c) Oral spirochaetes
    (d) Perleche
    (e) Serum sickness
    (f) Schartzman reaction.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

First and Second Dental Years

BIOCHEMISTRY

Examiner - G. E. CONNELL

Answer EIGHT questions

1. Describe two lines of evidence which show that "genes" are composed of deoxyribonucleic acid.

2. Describe the chemical structure of glycogen. Describe the action of salivary amylase on glycogen.

3. Name three proteolytic enzymes which are present in pancreatic juice. Show how these enzymes act on proteins.

4. Sketch a titration curve for a weak acid and label the significant features. Prove that the pK for a weak acid is equal to the pH at half neutralization.

5. Compare enamel, dentin, and bone with respect to their chemical composition.

6. Give a concise summary of the contributions of Warburg and Keilin to our knowledge of respiratory mechanisms.

7. Discuss the meaning of the term "high energy bond". Describe one biochemical reaction in which a high energy bond is formed.

8. Name two plasma proteins and state their physiological importance.

9. Discuss the role of creatine phosphate in muscle contraction.

10. Discuss the role of hemoglobin in the "isohydric transport" of CO_2 in the blood.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

SECOND DENTAL YEAR

PHARMACOLOGY

Write plainly. Up to 5 marks will be added for neatness, legibility and concise answers.

Marks

12 1. Write brief notes on the pharmacology of metrazol, hyoscine, chlorpromazine, codeine.

15 2. Discuss the pharmacology of cyclopropane and nitrous oxide and their use as general anaesthetics in dental surgery.

15 3. What is meant by the following terms: (1) muscarinic, (2) nicotinic, as applied to drugs? Giving examples of drugs having these actions, describe their effects when such are administered.

15 4. Define local anaesthetic. Giving examples, discuss briefly the pharmacological action of two.

12 5. Discuss the pharmacology of adrenergic blocking agents, pointing out any dangers attending their use.

12 6. Give synonyms, mode of administration, and dosage forms of chlorpromazine, amphetamine, demerol, acetylsalicylic acid.

14 7. Write a prescription for (1) a dozen 65 mg. tablets of codeine phosphate, for office use; (2) a 2% dibucaine ointment made with simple ointment for the base.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Second Dental Year

PHYSIOLOGY

Answer only FIVE of the seven questions. The questions are of equal value.

1. (a) Outline the properties and main functions of the following:
   (i) Antihaemophilic factor.
   (ii) Platelets.
   (iii) Antithrombin.

   (b) Discuss the break-down of red blood corpuscles, under the headings of:
   (i) Sites and modes of destruction.
   (ii) Products of destruction.
   (iii) Fates of these products.

2. (a) Discuss cardiac output, under the headings of:
   (i) Definition and representative values in man at rest.
   (ii) Relation to arterial blood pressure.
   (iii) Relation to venous return.

   (b) Outline the factors that regulate the heart rate in man, indicating the effects of the various factors.

3. (a) Describe the transport of oxygen by the blood, and the exchanges of oxygen between blood and tissues, and blood and alveolar air.

   (b) Outline the role of the glomeruli of the kidney, and show the forces involved in their function.

4. (a) Discuss the control of mastication and the effects of mastication in man.

   (b) Discuss the control of salivary secretion in man, indicating the factors and conditions that stimulate or inhibit secretion.

5. Write notes on:

(a) Tone (tonus) in muscle.

(b) The strength-duration relation in the stimulation of nerve and muscle.

(c) Transmission at endings of nerve fibres of the autonomic nervous system.

6. Discuss the factors that control the flow of blood in the capillaries.

7. Write on any two of the following;

Describe the effects produced by hormones of (i) the pancreas
(ii) the parathyroid gland
(iii) the adrenal medulla.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

THIRD DENTAL YEAR

ANAESTHESIA

PART A- LOCAL ANAESTHESIA

1. Outline in detail the technique employed for the following injections:
   (a) Mandibular block
   (b) Tuberosity block.
   (c) Extraction of six upper anteriors.

2. Discuss the chemical mode of action of a local anaesthetic.

3. Discuss three common reasons for failure to obtain profound anaesthesia.

4. How do you differentiate whether a reaction is due to:
   (a) toxic overdose
   (b) syncope
   (c) allergy
   (d) vasoconstrictor?

What is the treatment for each?

PART B - GENERAL ANAESTHESIA

5. Discuss the action of a general anaesthetic upon the central nervous system.

Notation

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Third Dental Year

NUTRITION AND PREVENTIVE DENTISTRY

Answer PARTS A, B, and C in separate examination books.

Marks

NUTRITION

PART A

15 1. Briefly discuss the role of nutrition in a programme of preventive dentistry.

18 2. (a) Briefly discuss the factors affecting calcium requirements.

(b) What are suitable calcium intakes for 5 year old, 10 year old and 15 year old children?

(c) What recommendations would you make with regard to foods to ensure an adequate supply of calcium for 5 year old, 10 year old and 15 year old children?

PART B

17 3. List and discuss each of the food groups comprising Canada's Food Rules. Explain how these are used in assessing patients' diets and on what basis recommendations for changes are made.

PREVENTIVE DENTISTRY

PART C

10 1. (a) Write a short paragraph on the composition and properties of the dental plaque.

5 (b) Draw a typical graph illustrating the relationship between the pH in a dental plaque (vertical axis) and the time in minutes

Marks

(horizontal axis) following a rinse with a concentrated glucose solution.

2. Answer each question in one sentence or less:

3 (a) List the major characteristics of the hydroxy apatite crystal lattice.

1 (b) What is epitaxy?

1 (c) What are the major buffer systems in saliva?

1 (d) What is the origin of ammonia in saliva?

1 (e) What constituents of the saliva are important in calculus formation?

1 (f) What is the significance of carbonates in teeth and dental caries?

2 (g) What is the experimental evidence that bacteria are a primary factor in the etiology of dental caries?

1 (h) List two caries activity tests.

2 (i) What is the experimental evidence indicating that the organic matrix (collagen) in dentin has little or no metabolic turnover?

2 (j) What are the two possible mechanisms by which fluorides in communal water supplies reduce dental caries?

1 (k) What is one major disadvantage relating to the use of topical stannous fluoride?

2 (l) The effectiveness of mechanically fluoridating water supplies has been tested over a ten year period in five main studies. Name two areas where these studies have been conducted.

1 (m) What is the major histological evidence that acid decalcification occurs in enamel caries?

1 (n) List two significant findings of the Vipsholm dental caries study.

15 3. Write a short paragraph on the organic and inorganic composition of enamel.

Pathology

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

THIRD DENTAL YEAR

GENERAL PATHOLOGY

Examiners - J. D. Hamilton
H. A. Hunter
H. Z. Movat
S. M. Shea
J. W. Steiner
P. Lampert

All questions to be answered. All questions of equal value.

Time: 2 hours

1. What is an exudate; give an account of its formation and function.

2. Define: Foreign body reaction
Cloudy swelling
Fatty metamorphosis

3. Describe the gross and microscopic features of a skin infection caused by staphylococcus pyogenes.

4. Describe the changes produced in the skin by radiation injury.

5. What is diabetes mellitus? Name any special pathological lesions associated with it, or complicating the disease.

6. Define peptic ulceration in clinical and pathological terms, mentioning pathogenesis, location, clinical course, gross and microscopic appearance and complications.

7. Give the (a) etiology of pernicious anaemia, (b) the main pathological changes, and (c) the blood picture.

8. List the features which distinguish benign from malignant neoplasms. Enumerate and discuss briefly the theories of carcinogenesis.

9. Give a classification of intracranial tumours.

10. What bacteria most commonly are responsible for subacute bacterial endocarditis? What complications can occur in endocarditis in (i) heart, (ii) spleen, (iii) bone marrow, (iv) kidneys, or elsewhere?

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

THIRD DENTAL YEAR

ORAL PATHOLOGY

No Paper Available

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1960

THIRD DENTAL YEAR

SURGERY

1. A patient has developed a severe osteomyelitis following a fracture of the horizontal ramus of the mandible:
   (a) Describe the clinical features related to the infection.
   (b) Describe the complications that may occur.
   (c) Describe the treatment.

2. Discuss leucoplakia of the tongue under the following headings:
   (a) Etiology
   (b) Clinical features from benign to malignant change.

3. A patient has a 30% burn - describe and explain the treatment.

4. DEFINE
   (1) Haematemesis
   (2) Compound fracture
   (3) A carbuncle
   (4) Ludwigs Angina
   (5) Thyroglossal cyst
   (6) Ranula

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Fourth Dental Year

Paper #1

DENTAL ORAL SURGERY AND ANAESTHESIA

VALUE - 66 MARKS

1. What are the three most frequent causes of failure to obtain adequate anaesthesia following injection of a local anaesthetic solution? Discuss the approach to each of these problems.

2. (a) State a simple classification of fractures of the mandible.
(b) Outline the proper course of treatment for a patient presenting with a fracture between the lower second bicuspid and lower first molar when a full and healthy complement of teeth are present in both jaws.

3. (a) What should be done when you find after extracting a maxillary first molar that an accidental opening has been made into the maxillary sinus?
(b) What should be done when the palatal root of an upper first molar is accidentally pushed into the sinus while you are trying to elevate it out?

4. Discuss fully the etiology, symptoms and treatment of a "dry socket".

RADIOLOGY

VALUE - 34 MARKS

1. Discuss from the radiological aspect the following:
(a) Osteomyelitis)
(b) Periostitis)
(c) Sequestra)
As seen in the Mandible and Maxilla

2. Describe the radiographic appearance of the various types of Odontomes. In your answer, mention the Differential Diagnosis.

#2

Prosthodontics
Dental Prosth
Medicine

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Fourth Dental Year

PAPER #2

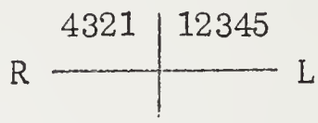
PROSTHODONTICS

VALUE - 51 MARKS

1. (a) What are the indications for rebasing complete dentures?
   (b) Describe briefly a complete maxillary denture rebasing procedure.
   (c) What are the greatest risks in rebasing complete dentures?

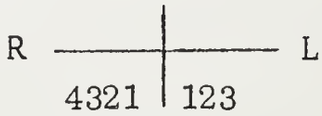
2. Sketch designs for removable partial dentures for the following semi-edentulous arches and indicate what mouth preparation may be necessary. (Use diagram stickers)

(a)



(i) There is a prominent maxillary torus but surgical removal of it is not indicated.
(ii) There is a M-O-D amalgam filling in $\underline{4}|$.
(iii) $\lfloor\underline{5}$ has a mobility of plus 1.

(b)



(i) A complete maxillary denture is to be constructed.
(ii) The depth from the gingival margins to the lingual frenum is very short.
(iii) $\overline{|4}$ was extracted three weeks ago.

3. A male patient age 48 has a full complement of maxillary and mandibular natural teeth. There is an end to end relation of the anterior teeth. The four mandibular incisors have to be removed because of periodontal involvement. The mandibular cuspids have good alveolar support but the crowns are slightly reduced in length due to attrition. A fixed restoration is indicated.

(a) Describe the type of bridge attachment most suitable for the mandibular cuspids from the standpoints of retention and esthetics. Illustrate.

(b) Give in outline a technique for making an impression of the mandibular arch for a master cast.

(c) What type of pontics would give the best esthetic result?

DENTAL PRAXIS

VALUE - 16 MARKS

1. Write approximately 350 words on the subject "Human Relations in Dentistry."

MEDICINE

VALUE - 33 MARKS

(Answer TWO Questions only)

1. (a) Discuss the signs and symptoms that would enable you to recognize that a patient coming into your office has Congestive Heart Failure.

(b) List four types of heart disease that may cause Congestive Heart Failure, and explain how they produce the clinical signs and symptoms.

(c) Discuss the treatment of Congestive Heart Failure.

2. Discuss Lung Abscess under the following headings:

(a) Causes

(b) Pathological Changes in the Lung

(c) Clinical Signs and Symptoms

(d) Treatment.

3. Discuss fully the Cause, Symptoms and Signs and Treatment of TWO Types of Anaemia.

#3

Periodontics
operative Dentistry
Endodontics

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Fourth Dental Year

PAPER #3

PERIODONTICS

VALUE - 33 MARKS

1. (a) Describe concisely, using drawings, the classification of the pockets characteristic of gingival and periodontal disease.

(b) Name the principles employed in reducing the depth of the pockets mentioned in (a).

(c) Name the type of pocket which is seen most frequently in Canada.

(d) Name the principle which is usually efficient for reducing the depth of the pocket mentioned in your answer to (c).

2. (a) Describe, in outline form, the causes of abnormal recession of the gingival tissues.

(b) List the features of diagnostic significance for recession of the gingival tissues produced by tooth brush trauma.

OPERATIVE DENTISTRY

VALUE - 50 MARKS

1. (a) Describe the importance of the gingival bevel on a cast gold inlay.

(b) Enumerate the indications for a cast gold inlay rather than an amalgam for restoring a tooth.

2. (a) Describe your method of replacing a lower left first molar in a patient 14 years of age.

(b) List all the possible causes of pulpal injury that may be encountered in Dentistry.

3. (a) What precautions must be taken when restoring two approximal amalgam restorations at the same appointment.

(b) What base, if any, do you consider adequate under a self-curing resin restoration?

(c) What is the approximate pH of Zinc oxyphosphate cement?

ENDODONTICS

VALUE - 17 MARKS

1. Patient "A" presents with an "aching" maxillary central incisor. The chief complaint is of a continuous pain which is definitely identified with that one tooth. The crown is of abnormal colour. The tooth reacts sharply to percussion but does not respond to electrical test. The radiograph is negative. There is no edema.

Patient "B" presents with an "aching" maxillary central incisor. The chief complaint is of a sharp, intermittent pain. The crown is of normal colour. There is no reaction to percussion test but application of cold and electric test elicit a sharp response. The radiograph is negative. There is no edema.

(a) What is your diagnosis of the condition causing the pain in each patient?

(b) Describe briefly the emergency endodontic treatment you would employ to obtain relief from pain for each patient.

Paper # 4

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

Fourth Dental Year

PAPER #4

ORTHODONTICS

Marks

17 1. Outline the etiology and diagnosis of excessive overbite.

16 2. A bite plate is an appliance of limited use in the correction of excessive overbite. Outline the reasons.

PEDODONTICS

Answer all questions in point form.

15 1. A child of 5 presented with what you diagnosed as Acute Herpetic Gingivostomatitis.

(a) What were the oral signs observed?

(b) What extra-oral and systemic signs and symptoms did you note?

(c) What was your advice to the parent regarding:

(i) Duration

(ii) Contageon

(iii) Immunity.

18 2. (a) Examination of a 4 year old child reveals the following:

(i) $\overline{ed|e}$ sinus on buccal of all three teeth.

(ii) $\overline{|c}$ and $\overline{|d}$ distal caries - prognosis good.

(iii) $\underline{a|a}$ sinus at apex of both teeth. History of accident at age 3.

(iv) $\underline{e|de}$ large cavities not involving pulps.

GIVE YOUR DIAGNOSIS AND TREATMENT PLAN FOR THIS CHILD. (Omit all Operative and Laboratory Techniques)

Marks

(b) This same child remains under your care and at age 6 presents at a routine recall with the following:

(i) $\overline{6|6}$ partially erupted.

(ii) $\underline{6|}$ erupting in Ectopic Eruption. It is just caught under the contact point of $\underline{e|}$ with only slight resorption of the root of $\underline{e|}$.

GIVE YOUR DIAGNOSIS AND TREATMENT PLAN.
(Omit all Operative and Laboratory Techniques)

PREVENTIVE DENTISTRY

17 1. Discuss the use of dental cleansing agents in the control of dental caries.

DENTAL PUBLIC HEALTH

17 2. What principles of public health procedure involve the general practioner of dentistry and how should these affect dental practice?

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATION, 1960

DENTAL HYGIENE - FIRST YEAR

DENTAL ANATOMY - GENERAL ANATOMY - ANATOMY OF THE HEAD AND NECK

USE SEPARATE EXAMINATION BOOKS FOR
PARTS A, B, AND C

A. DENTAL ANATOMY

1. How do the primary teeth differ anatomically from those of the permanent dentition.

2. Where is the periodontal membrane located? Name its structural elements and describe its functions.

3. Where do the cusps of $\underline{e}|$ contact the surface of $\overline{e}|$ in centric occlusion?

B. GENERAL ANATOMY

1. Define the following:

   (a) Median Plane
   (b) Foramen Magnum
   (c) Pleural Cavity
   (d) Tendon

2. Name the principal parts of the Alimentary Tract, and state the chief functions carried out by each.

C. ANATOMY OF THE HEAD AND NECK

1. Give a brief description of:

   (a) the tongue
   (b) the maxilla

2. Describe:

   (a) the oropharyngeal isthmus
   (b) the nerve supply to the upper teeth
   (c) the Buccinator muscle
   (d) the Mylohyoid muscle.

****

****

UNIVERSITY OF TORONTO
Faculty of Dentistry

75

ANNUAL EXAMINATIONS, 1960

FIRST YEAR - DENTAL HYGIENE

DENTAL PROPHYLAXIS

---

1. (a) Outline the differentiation of types of periodontal disease.

   (b) State the relative frequency of occurrence of these types within the local population.

   (c) For which type of periodontal disease may the hygienist perform a main portion of the therapy?

2. Outline, in brief terms, the causes of gingivitis.

3. (a) How is natural cleansing of the mouth effected?

   (b) Outline briefly conditions in and about the mouth which would interfere with the self-cleansing mechanism.

   (c) When the self-cleansing mechanism is not efficient, what measures could be employed for artificial cleansing?

4. What are the purposes and the effects of the periodontal pack?

5. Describe, using drawings, the sequence of events in periodontal pocket formation.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

FIRST YEAR - DENTAL HYGIENE

DENTAL RADIOGRAPHY

---

1. (a) What is the main constituent of the emulsion of a radiographic film?

   (b) What is the special property of this constituent which makes it useful radiographically?

   (c) Explain what is meant by the term, "latent image".

   (d) Explain briefly how the latent image is made visible.

2. (a) Explain why the shadow images of bone, enamel, dentin, and soft tissue can be distinguished from one another on a dental radiograph.

   (b) Which of these tissues produces the whitest image and which the darkest image on a radiograph? Explain why.

3. Let us suppose that when the x-ray machine is set at 15 milliamperes, 90 Kilovolts, and 8 inch target-film distance, the exposure time required to produce a dental radiograph of proper density is 1 second.

   If any of the following changes were made, what alteration in the exposure time would be necessary to obtain the same film density? Why?

   (a) Changing the tube current from 15 milliamperes to 10 milliamperes.

   (b) Changing the kilovoltage from 90 to 65. (Give an approximate time)

   (c) Changing the target-film distance from 8 inches to 16 inches.

   (d) Using a film which is twice as fast.

4. (a) Explain briefly the difference between quantity of radiation reaching the patient and dose to the patient when a radiographic exposure is made.

   (b) Explain what is meant by filtration and collimation of the x-ray beam and how these measures aid in reducing the hazards of radiation.

.../Page 2

5. A compromise with the ideal requirements for accurate shadow-casting with x-rays is often necessary in radiographic technique. The angle-bisecting technique is one such compromise. Explain.

6. (a) Explain the term "fogging" as applied in radiography. What are the causes of fogging?

   (b) Define"contrast" as applied in radiography. If one wishes to retake a dental radiograph in order to increase the contrast, without altering the density, what possible alterations in technique or materials might be considered to obtain this result.

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1960

FIRST YEAR

ENGLISH COMPOSITION

Write an essay of approximately 1,000 words commenting on one of the following statements. You may support the statement, refute it, or modify it in any way you wish.

(1) "The purpose of a university is to unsettle the minds of the young"

(2) "Satire has naturally fluorished in the past, but today there is nothing left for a satirist to attack."

(3) "Canada is a geographical expression rather than a nation."

(4) "Only the old and forgetful regard youth as a time of untroubled happiness"

Your essay must take the form of a well-developed, coherent and convincing discussion. Give care to such matters as organization, paragraphing, sentence structure, spelling and punctuation. You are advised to use some of your time for planning and re-reading the essay.

English Literature

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1960

FIRST YEAR

ENGLISH LITERATURE

Examiners - The Staff in English

Answer FOUR questions in all: question 'A', and one from each of parts 'B', 'C', and 'D'. Students are advised to give 30 minutes to answering each question, and 30 minutes to planning and re-reading answers.

PART A

Identify the speaker and the situation, and comment in a sentence or two on the significance of five of the following quotations:

(a) I'm one of the undeserving poor: that's what I am.

(b) If she marries the man I would ha' her, she may love whom she pleases.

(c) Never fight fair with a stranger, boy. You'll never get out of the jungle that way.

(d) How vain are all these glories, all our pains,
Unless good Sense preserve what Beauty gains.

(e) I thought where all thy circling wiles would end,
In feigned religion, smooth hypocrisy!

(f) It is too late . . . . I waited and waited for you. But you did not come.

(g) It is a curious thing how your mind is supersaturated with the religion in which you say you disbelieve.

PART B

1. "The differences in inner character between Lear and Willy Loman are more significant than the differences in outward rank." Discuss.

2. "In the death of the tragic hero, defeat and triumph are mingled." Assess the truth of this statement with reference to two of the following: Lear, Samson, Willy Loman.

PART C

1. "Much of the comedy of character in Fielding springs from the contrast between intention and action or between appearance and reality." Discuss with reference to three or four characters in Tom Jones.

2. "If the satirist is a man who is indignant because of the contrast between his ideals for humanity and the actual state of human affairs, he needs to make clear to the reader what his ideals or standards are." What are Swift's positive ideals and how does he represent them in Gulliver's Travels?

3. "Stephen Dedalus in A Portrait of the Artist as a Young Man is in conflict not only with his environment but also with himself." Discuss.

PART D

1. Compare "The Bishop Orders his Tomb" OR "Andrea del Sarto" with Eliot's "The Love Song of J. Alfred Prufrock", considering form and technique as well as subject, theme and mood.

2. Defining the various attitudes expressed and techniques employed, discuss the treatment of death by three of the following poets: Donne, Browning, Housman, Eliot, Yeats.

3. Compare "Ode on a Grecian Urn" and "Ode to a Nightingale", pointing out any significant similarities or differences in theme, form and technique.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

FIRST YEAR - DENTAL HYGIENE

FOOD CHEMISTRY

Examiners: C.G. Elliott
J. Scott

ALL QUESTIONS TO BE ANSWERED

1. (a) Calculate the per cent acidity of pure lemon juice using the following information: 10.00 ml. sample of 50% lemon juice was neutralized by 11.60 ml. of o.3560N NaOH. Assume the acid in the lemon juice is all citric acid which has an equivalent weight of 70 grams.

   (b) How many grams of Na_2SO_4 would be found in the following:

   (i) 2 litres of 0.5 molar solution,
   (ii) 50 ml. of a 2% w/v solution.
   Na - 23 S - 32 O - 16

2. (a) What is the meaning of each of the following suffixes when used in naming organic compounds? "al", "ol", "one", "ose", "oic", and "ase". Give an example for each group of compounds and a structural formula wherever possible.

   (b) From each of five of the groups listed above give an example of a compound associated in some way with a food or food product. Explain the relationship briefly.

3. (a) Give an equation for the preparation of soap from fat. Explain the effect of hard water on soap.

   (b) What is an ester? Give structural formula and example. Give equation for preparation.

   (c) Explain with reference to fats: hydrogenation, saponification number, rancidity, iodine number, acrolein.

   (d) Define pH. Why do solutions of acetic acid and hydrochloric acid of the same molarity have different pH values?

4. (a) What is the difference between an aldo-hexose and a keto-hexose? Give structural formulae and examples in the answer.

   (b) With respect to carbohydrates, explain the following: pentose, optical rotation, osazone, reducing test.

.../Page 2

4. (c) List eight carbohydrates and classify them as monosaccharides, disaccharides or polysaccharides. In the cases of disaccharides and polysaccharides indicate the monosaccharides from which they are formed. Tell how each of the carbohydrates chosen in your answer would react to a Fehling's test?

5. (a) Describe with structural formulae:

(i) Amino acids
(ii) peptide bonds.

Explain the significance of these with respect to protein.

(b) Explain the following when referred to proteins:

conjugated protein,
isoelectric point,
biuret test,
denaturation,
Millon's test.

(c) What are food sources of the following proteins:

casein,
albumin,
gelatin.

Which of the above are good dietary proteins. Explain.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

FIRST YEAR - DENTAL HYGIENE

HISTOLOGY

---

1. Define mucous membrane. Describe in detail the special characteristics of the gingiva.

2. Name the parts of a tooth germ. Describe the formation of a tooth from its initiation to the time that the shape and size of the crown is determined.

3. Compare and contrast the formation, structure and function of enamel and dentin.

4. Write a brief explanatory note on each of the following:

   lamina dura
   reduced enamel epithelium
   pulp stones
   perikymata
   cell rests of Malassez
   physiologic mesial drift
   Sharpey's fibers
   interglobular dentin
   enamel spindles
   cellular cementum

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

FIRST YEAR DENTAL HYGIENE

PSYCHOLOGY

No Paper Available

UNIVERSITY OF TORONTO
SCHOOL OF NURSING

ANNUAL EXAMINATIONS
SESSION 1959-60

PUBLIC HEALTH NURSING - GENERAL AND DENTAL HYGIENE - II

PREVENTIVE MEDICINE 8 - SECTION II

BACTERIOLOGY

Examiner - Dr. F. H. Fraser

1. (a) What would you consider to be a satisfactory procedure for the sterilization of surgical instruments such as scissors and scalpels?

(b) Outline an experiment to show whether this procedure destroys bacterial spores.

(c) What spore-bearing bacteria are of pathogenic importance in surgery?

2. (a) How is the agglutination reaction employed in the investigation of bacterial infection and immunity?

(b) Outline the preparation of an agglutinating serum.

(c) Describe in essential detail the performance of a bacterial agglutination test.

3. (a) Outline the isolation in pure culture of a strain of staphylococcus from a throat swab.

(b) What is acceptable as sufficient evidence of the purity of the culture?

(c) Outline the testing of this strain for sensitivity to penicillin.

4. (a) Outline the preparation of B. C. G.

(b) What tests are required to show its efficacy and safety?

(c) What is the general policy regarding the use of B. C. G. in Canada?

5. (a) What are the morphological and cultural characteristics of Neisseria gonorrhoeae?

(b) What laboratory evidence is required for a bacteriological diagnosis of gonorrhoea?

(c) Outline the procedure for collecting a specimen for bacteriological examination.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

SECOND YEAR - DENTAL HYGIENE

DENTAL PUBLIC HEALTH

MARKS

15 1. (a) Give one definition for public health and the authority credited for it.

(b) State three principles of public health procedure.

(c) Explain very briefly the application of these three principles in dental public health programme planning and administration.

15 2. (a) Dental Health indices fall into 5 classifications, viz.:

(i) Level of treatment received
(ii) Dental caries prevalence
(iii) Level of oral hygiene
(iv) Periodontal disease prevalence
(v) Malocclusion prevalence

Name and define one index applicable to each separate classification.

(b) Briefly describe the three common sampling methods.

Name the two types of sampling error.

Give one example of each type of error and show how the risk of error may be reduced.

15 3. (a) Describe 2 types of Recording Forms used for recording items observed in a dental survey.

Describe the two kinds of Collation Books used for arraying dental statistics.

(b) List and describe the five types of charts commonly used to illustrate statistics in a dental report.

10 4. In dental health policy, preventive measures fall into four categories:

(a) State these categories.

(b) Give an example to explain each one.

.../Page 2

MARKS

15 5. You are associated with a busy general practice of dentistry:

(a) What practice procedures would you consider to be preventive in nature?

(b) What duties would you expect to have delegated to you in this situation?

(c) What co-operation could you give toward a public health dental programme in that community?

30 6. Write brief notes on THREE of the following topics:

(a) Media Used in Dental Health Education.

(b) The Health Proposals of the Government of Canada - 1945.

(c) Fluorides in Caries Prevention.

(d) Visiting Nursing Services in Canada.

(e) Types of Immunity Influencing General Health.

(f) Plans Operated in Ontario under the Canadian Dental Service Plans Incorporated.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

DENTAL HYGIENE - SECOND YEAR

PATHOLOGY & PHARMACOLOGY

The Answers for Pathology and Pharmacology are to be written in separate books.

PATHOLOGY

1. List and describe the various functions of the dental pulp.

2. Describe how dental caries destroys both the enamel and the dentine.

3. List six examples of dental hypoplasia and describe ONE in detail as to cause and its effect upon the tooth.

4. Give six examples of factors that influence the formation of accretions on the teeth and explain their mode of action.

5. Give an account of three ways in which a malignant tumour may spread to a distant part of the body.

6. Give an example each of hyperaemia acting in a beneficial capacity and also in an injurious manner.

7. How does the process of inflammation act in the healing process?

8. How is the state of gangrene of the dental pulp brought about?

PHARMACOLOGY

1. Classify the following drugs:-

(a) Demerol	(e) Coramine
(b) Codeine	(f) Streptomycin
(c) Epinephrine	(g) Morphine
(d) Atropine	(h) Procaine

2. Name three antibiotics, specify uses. What antibiotic is most used in dentistry? What precautions must be taken before it's use?

3. List five properties of a good local anaesthetic. Name a topical anaesthetic and explain how it is used.

4. List five properties essential for a disinfectant - antiseptic.

5. What is the effect on the body of a therapeutic dose of atropine?

6. For what purposes might one use a sedative drug in dentistry? Name one commonly used.

- * * * * * -

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

SECOND YEAR - DENTAL HYGIENE

PHYSIOLOGY

ALL QUESTIONS ARE OF EQUAL VALUE

1. (a) Discuss the chemical factors which modify the activity of the respiratory centre and outline the mechanism whereby their actions are brought about.

   (b) Outline the factors involved in the development of an effective filtration pressure in the kidney.

2. Discuss the role of the liver in protein, carbohydrate and fat metabolism.

3. Discuss the physiological actions of ANY TWO of the following hormones:
   thyroxine, adrenocorticoids, insulin, and indicate the results of hypoactivity and hyperactivity of the endocrine glands which produce the two hormones which are being discussed.

4. Write brief notes on the following:

   (a) succus entericus;

   (b) origin and function of the plasma proteins;

   (c) the method used for typing blood according to the ABO system of blood goups;

   (d) enterogastrone.

5. (a) List the factors responsible for the maintenance of blood pressure.

   (b) Discuss the pressure changes in the lung blood vessels during the respiratory phases.

   (c) Describe the structure and function of the arterioles.

Faculty of Dentistry

ANNUAL EXAMINATIONS, 1960

SECOND YEAR - DENTAL HYGIENE

PREVENTIVE DENTISTRY

USE FOR EACH QUESTION SEPARATE BOOK

1. Discuss the role of

   (a) Foods rich in Carbohydrate
   (b) Foods rich in Protein

   as related to the incidence of dental caries in children of school age.

2. (a) What preventive programme should the parents of newborn infants follow to minimize the occurrence of undesirable sucking habits?

   (b) What are the factors acting Prenatally and Postnatally to produce malocclusion?

3. "Canada's Food Rules is a set of recommendations which were designed to fit conditions in Canada and to suit Canadian food habits".

   Briefly discuss this above statement under the following headings:

   (a) Factors which affect food habits.
   (b) Discuss the practical significance of the flexibility of Canada's Food Rules.
   (c) What foods or food groups are likely to be ignored by Canadian school children?

4. Describe fully an adequate method of diet counselling for dental patients, under the following headings:

   (a) method of assessing the diet.
   (b) nutrients supplied by food groups.
   (c) relative costs of individual foods.
   (d) diet in relation to dental caries incidence.
   (e) a test for dental caries susceptibility.

5. (a) Where are the normal primate spaces in the deciduous dentition and what is their significance in the transition from deciduous to permanent dentitions?

   (b) Under what circumstances might a 3 millimeter diestema between the maxillary left and right permanent central incisors be considered abnormal in an 8 year old child?

UNIVERSITY OF TORONTO
FACULTY OF ARTS

807

ANNUAL EXAMINATIONS, 1960

FIRST YEAR

SOCIOLOGY 1a
The Social Structure of the Community

Examiners - The Staff in Sociology

1. Indicate what is meant by status and discuss fully the importance of this concept in understanding how society is organized.

2. (a) Discuss the phenomenon of urban growth and indicate the nature of some of the significant differences between urban and rural society.

OR

(b) Discuss critically the treatment of social class in your textbook.

3. In what way could the slum area studied by Whyte in Street Corner Society be considered a highly organized area? In what way, on the other hand, could it be considered an area of social disorganization?

4. (a) Discuss, with reference to the Mennonites, the Doukhobors or the Hungarians, the way in which an ethnic group seeks to maintain its identity in the larger community and the way in which, on the other hand, it becomes absorbed by the larger community.

OR

(b) Indicate the nature of the forces bringing about social change in French Canada and discuss the more important social changes taking place.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

DENTAL NURSING

DENTAL RADIOGRAPHY

1. (a) What are the chief properties of X-Rays?
   (b) Define:
      (i) Radioparent
      (ii) Intensifying screens
      (iii) Gonadal dose
      (iv) X-ray film.

2. What conditions are necessary in the production of X-rays and how are these met in the X-ray tube? (Diagram)

3. What precautions can be taken to reduce excessive radiation to:
   (i) patient
   (ii) operator

4. Give two causes for each of the following faults in radiographs:

   (i) Reticulation
   (ii) Frilling
   (iii) Fogging
   (iv) Black streaks
   (v) Partial images
   (vi) Blurred
   (vii) Yellow stain
   (viii) No image
   (ix) Light spots
   (x) Lack of contrast

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

DENTAL NURSING

ETHICS AND JURISPRUDENCE

Marks

25 1. Your character consists of the sum total of your habits.
Discuss the rules given to help you adapt new a nd desirable habits.

25 2. Define the following as they apply to "Conduct in the Dental Office"

(a) Pleasantness
(b) Courtesy
(c) Attentiveness
(d) Resourcefulness
(e) Dependability

25 3. Enumerate and discuss briefly the Prime Objectives of a Profession

25 4. Give five Jurisprudence rules for Dental Nurses.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

DENTAL NURSING

OPERATIVE DENTISTRY ASSISTANCE

Marks

20 1. Name ten drugs used in dentistry, classify them and give one use for each drug.

30 2. Write brief notes on:
(a) Sterilization and asepsis in a dental office.
(b) The making of dental appointments and the use of the telephone in a dental office.

28 3. Discuss in detail how a nurse can assist and the precautions she should take during the following operations:

(a) Setting of a gold inlay
(b) A silver amalgam filling
(c) A root canal filling
(d) A silicate cement filling

22 4. Discuss the preparation necessary in the dental office prior to the admission of the first patient of the day.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1960

DENTAL NURSING

PERIODONTICS

MARKS

20 1. On a drawing indicate -

(a) Free or marginal gingiva
(b) Attached gingiva
(c) Gingival sulcus
(d) Epithelial attachment
(e) Alveolus
(f) Pericemental membrane

20 2. Outline causes of gingivitis

10 3. What are the components of materia alba?

10 4. Give a classification of dental calculus.

20 5. Describe concisely values which may arise from the use of:

(a) The tooth brush
(b) A dentifrice.
(c) Interdental cleansers

20 6. Outline methods of value in treating gingivitis.

This book must be returned to the Dental Library by the last date stamped below. It may be renewed if there is no reservation for it.

OVERNIGHT BOOK

NOV - 6 1964
NOV 13 1964
NOV 16 1964
DEC 16 1964
JAN - 4 1965
JAN 18 1965
FEB 25 1965
MAR - 8 1965
MAR 22 1965
MAY 18 1965
MAY 21 1965
JAN 17 1966
NOV 3 '66

270-12-62

Harry R. Abbott
Memorial Library

1641

(1960)

FACULTY OF DENTISTRY
TORONTO